May 29, 1998

Mr. Harold W. Keiser
Executive Vice President
Nuclear Business Unit
Public Service Electric and Gas Company
P. O. Box 236
Hancocks Bridge, New Jersey 08038

SUBJECT: PLANT PERFORMANCE REVIEW (PPR) - Salem Units 1 & 2

Dear Mr. Keiser:

On April 30, 1998, the NRC staff completed the semiannual Plant Performance Review (PPR) of Salem Units 1 & 2. The staff conducts these reviews for all operating nuclear power plants to develop an integrated understanding of safety performance. The results are used by NRC management to facilitate planning and allocation of inspection resources. The PPR for Salem Units 1 & 2 involved the participation of all technical divisions in evaluating inspection results and safety performance information for the period of approximately six months. PPRs provide NRC management with a current summary of licensee performance and serve as inputs to the NRC Systematic Assessment of Licensee Performance (SALP) and senior management meeting (SMM) reviews.

Enclosure 1 contains a historical listing of plant issues, referred to as the Plant Issues Matrix (PIM), that were considered during this PPR process to arrive at an integrated view of licensee performance trends. The PIM includes only items from inspection reports or other docketed correspondence between the NRC and PSE&G. The PPR may also have considered some predecisional and draft material that does not appear in the attached PIM, including observations from events and inspections that had occurred since the last NRC inspection report was issued, but had not yet received full review and consideration. This material will be placed in the PDR as part of the normal issuance of NRC inspection reports and other correspondence.

This letter advises you of our planned inspection effort resulting from the Salem Units 1 & 2 PPR review. It is provided to minimize the resource impact on your staff and to allow for scheduling conflicts and personnel availability to be resolved in advance of inspector arrival onsite. Enclosure 2 details our inspection plan for the next 6 months. The rationale or basis for each inspection outside the core inspection program is provided so that you are aware of the reason for emphasis in these program areas. Resident inspections are not listed due to their ongoing and continuous nature.

We will inform you of any changes to the inspection plan. If you have any questions, please contact Mr. James C. Linville at 610-337-5129.

Sincerely,

Original Signed By:

James C. Linville, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos. 50-272, 50-311
License Nos. DPR-70, DPR-75

Enclosures: 1. Plant Issues Matrix
2. Inspection Plan

cc w/encl:
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E. Simpson, Senior Vice President - Nuclear Engineering
E. Salowitz, Director - Nuclear Business Support
A. F. Kirby, III, External Operations - Nuclear, Delmarva Power & Light Co.
C. Bakken, General Manager - Salem Operations
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ENCLOSURE 1

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
3/15/98	Negative	IR 98-01	N	OPS	3A 5C	The licensee's corrective actions to address the reasons for an apparently fatigued licensed control room supervisor were acceptable. However, there were some weaknesses identified in licensee management oversight of individual employee work hours which the licensee has initiated actions to address.
1/30/98	Positive	IR 98-02	N	OPS	3B	The candidates demonstrated very good communications during the simulator exercises, both during routine and emergency portions of the exercise. Briefings were conducted by the control room supervisor candidates on a routine basis. The briefings were well controlled and ensured that all personnel knew the plant (simulator) status.
1/30/98	Positive	IR 98-02	N	OPS	3B	The examiners overall observed very good self and peer checking prior to reactivity manipulations during the simulator scenarios and generally good self checking during the other operational portions of the exam. Peer checks prior to reactivity changes was considered a strength by the examiners.
1/30/98	Positive	IR 98-02	N	OPS	3B	Overall, candidate performance during the operating tests was determined to be good. There were no significant generic weaknesses identified.
3/15/98	Negative	IR 98-01	N	OPS	1A 3A	Licensed operators' inadequate monitoring of plant parameters and maintenance of steam generator levels, combined with inadequate communications and crew teamwork resulted in an inadvertent automatic start of the auxiliary feedwater pumps when the 14 steam generator level decreased to 9%. The reactor operator did not follow procedure requirements to maintain the steam generator levels within the required band.
3/15/98	Positive	IR 98-01	N	OPS	1A 1B	In general, the conduct of operations was professional and safety-conscious. Activities associated with the shutdown of Unit 2 on February 11 and the heatup of Unit 1 on February 18, were performed in a deliberate manner with clear communications.
2/20/98	Positive	IR 98-81	N	OPS	5A 5B	The Operations self-assessment process was in place and effective in identifying strengths and weaknesses in operator performance. Quality Assurance was actively involved in ongoing operational activities and reports were detailed and effective in keeping management informed of operations and personnel performance trends.
2/20/98	Positive	IR 98-81	N	OPS	3B 3A	The training and qualifications of Operations personnel were satisfactory. Licensed operator performance at the training simulator was professional and requalification evaluation results were satisfactory. Overall, the inspector concluded that training and qualification of the operations staff were sufficient to provide for a safe plant startup and continued operation.
2/20/98	Positive	IR 98-81	N	OPS	1C	Operations procedures were technically correct, operators complied with the procedures, initials and signatures were entered as appropriate, and appropriate reviews were performed prior to and following completion of a procedure.

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Date	Type	Source	ID	SFA	Code	Item Description
2/20/98	Positive	IR 98-81	N	OPS	3C 4B 5C	Existing operator workarounds, control room indicator deficiencies, and operator burdens were being managed and tracked appropriately. A general decline had been noted in the number of outstanding items in these areas, and the operators indicated that they were comfortable with those that existed. They also noted that significant improvements had been made in this area, and that maintenance and engineering were actively supporting operations in an effort to resolve those deficiencies that did exist. The tagging process and equipment lineups were found to be adequate. The TS tracking methods were effective in maintaining operator awareness of the status of TS action statement requirements.
2/20/98	Positive	IR 98-81	N	OPS	1A	The non-licensed equipment operators were knowledgeable, were aware of their assigned responsibilities, assured plant deficiencies were corrected, and conducted good turnovers.
2/20/98	Positive	IR 98-81	N	OPS	1A 3C	The licensed operators were knowledgeable, professional, and conscientious regarding safe plant operations. Control room conduct was excellent with good command and control. Communications were very good. Individual and shift turnovers were professional, detailed, and thorough. Pre-briefs, prior to plant evolutions and tests, were routinely accomplished. Management involvement and oversight was noted throughout the course of the inspection. The shutdown of Unit 2 and the heatup of Unit 1 were accomplished in a deliberate and well controlled manner. Shift technical advisor involvement was evident, especially in regard to reactivity management.
2/1/98	Positive	IR 97-21	N	OPS	5C 5B	The licensee continued to make progress in reducing the number of operator workarounds and control room deficiencies and was actively working to minimize the number of deficient conditions and was adequately assessing the aggregate impact of these conditions.
2/1/98	NCV Positive	IR 97-21 NCV 97-21-02	N	OPS	5C 5B	The actions taken by the licensee to restore the operability of an auxiliary building ventilation damper were timely and adequate. However, the licensee failed to promptly identify the reporting requirements specified in 10CFR50.72.
2/1/98	VIO	IR 97-21	N	OPS	1A	In two instances, operators failed to comply with the established procedures for configuration control. This non-compliance led to plant operators exceeding the time limit established by plant technical specifications for an inoperable Unit 2 chiller. PSE&G has initiated actions to address weaknesses in configuration control. A violation of TS 6.8.1 resulted.
2/1/98	Positive	IR 97-21	N	OPS	1A	Unit 1 activities were conducted in a more controlled manner than during the previous inspection period. Plant operators performed well during the Unit 1 drain down to mid-loop and the vacuum fill of the reactor coolant system. Stable plant conditions were cautiously maintained during the prolonged effort to calibrate the narrow range mid-loop level indicators.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
11/30/97	Negative	IR 97-19	N	OPS	1C	Overall, the Salem requalification program was satisfactory. However, several areas for improvement were identified regarding exam security measures, backlog of simulator deficiencies, and record keeping or oversight to ensure watch standing requirements to maintain licenses active were being met. Although observed operator performance was generally satisfactory, it was noted that there was a fairly high failure rate following the thirteen week startup training program and for the 1997 annual operating exam. Weak operator performance on exams coupled with recent plant problems caused the inspectors and the licensee some concern over the possible link to Salem requalification program effectiveness. The licensee had taken actions to document, investigate and resolve these concerns.
11/30/97	Positive	IR 97-19	N	OPS	1A	Licensee management's immediate corrective actions to address the increase in configuration control errors for Unit 1 were appropriate and effective in reducing the occurrence of similar errors.
10/19/97	Positive	IR 97-18	N	OPS	1A	The intermediate head portion of the Unit 2 safety injection system was properly aligned for the existing plant conditions and capable of performing its design safety function. Overall material condition of the safety injection system was good, and adequate system configuration control procedures have been implemented.
10/19/97	Negative	IR 97-18	N	OPS	1C 2B	Although the licensee's investigation of the inappropriate removal of a control room radiation monitor was generally good, they failed to investigate the interface between the operations and craft personnel, which was a weakness.
10/19/97	Positive	IR 97-18	N	OPS	1A 2B	Licensee personnel conducted Advanced Digital Feedwater Control System testing in a controlled and coordinated manner. The pre-test briefings were well-prepared, thorough, and covered related events from industry experience. The licensee took a positive initiative to perform the evolutions in the simulator prior to actual conduct of the tests. In addition, the licensee analyzed a rod motion anomaly in a controlled and logical manner and took adequate corrective actions.
10/19/97	Positive	IR 97-18 LER 97-014	N	OPS	1B	The operators responded very well to the October 2 feedwater transient and subsequent manual reactor trip and followed plant procedures. Overall, the licensee's follow up response to the trip was adequate. Station Operations Review Committee performance was good in that the restart was delayed until more troubleshooting could be performed for the steam generator steam line flow indication discrepancies. Although the licensee was unable to fully understand these discrepancies prior to plant restart, they did appropriately monitor steam line flows during startup.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
3/15/98	VIO	IR 98-01	N	MAINT	3C 3B	Poor planning and inadequate maintenance practices resulted in an incorrect control switch being installed on the 12 Diesel Fuel Oil Transfer Pump (DFOTP), which rendered the pump inoperable. The licensee ascended to Mode 4 on Unit 1 with less than the required DFOTPs operable, which was a Technical Specification violation. The licensee's immediate corrective actions for this event were weak, including an untimely operability determination for the wrong part being installed on the 21 DFOTP, and untimely verification of correct part numbers for similar control switches on the four DFOTP electrical panels.
3/15/98	VIO	IR 98-01 VIO 98-01-04	N	MAINT	3A 2B 1C	Procedural adherence for the 2A Emergency Diesel Generator (EDG) post-maintenance testing was poor. Numerous procedural violations by maintenance and operations personnel resulted in the improper operation of the diesel. There was little safety significance to these violations as the diesel was out of service for maintenance. However, they showed a lack of questioning attitude and attention to detail by numerous personnel. Additionally, the engineering action plan utilized for the maintenance effort was not sufficiently detailed to promote smooth transition between the maintenance and operations procedures used.
3/15/98	Positive	IR 98-01	N	MAINT	2C 4C	The licensee adequately implemented their Technical Specification Surveillance Improvement Program to support Unit 1 restart.
3/15/98	Negative	IR 98-01	N	MAINT	3B 3C	The licensee met all Technical Specification requirements for the 2C EDG outage and the crankcase alarm on the 2B EDG. The operator correctly followed the alarm response procedure for the 2B alarm. The operability determination for the 2B EDG after the cause of the alarm was determined was adequate, but the decision to run the 2B EDG during the 16-hour 2C EDG outage was not appropriate.
3/15/98	Positive	IR 98-01	N	MAINT	2B 5B	On February 11, 1998, the 2A EDG turbocharger failed during a post maintenance test. The licensee formed a team to get the relevant facts, find the cause of the failure, evaluate its significance to the operability of the other EDGs, and establish corrective actions. The NRC concluded that the preliminary root cause evaluation of the failed turbocharger blade was thorough, detailed, and accurate. The inspector also concluded that the licensee had properly responded to the EDG turbocharger failure by initiating a thorough evaluation.
2/20/98	Positive	IR 98-81	N	MAINT	5A	The maintenance self-assessment and corrective action program was effectively identifying and evaluating problems. The condition report backlog was properly prioritized and managed. Action plans were in place to address problems identified by trending of condition reports. Maintenance and Planning self-assessments and Quality Assurance surveillances were effective in identifying problem trends to management.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
2/20/98	Positive	IR 98-81	N	MAINT	3A 3C	The maintenance department was able to support the plant. The organization was adequately staffed and demonstrated strong management and teamwork during routine and emergent activities. The maintenance planning and scheduling processes were not mature, but were adequate to track and address plant equipment deficiencies. The prioritization and planning for safety-related activities was adequate.
2/20/98	Positive	IR 98-81	N	MAINT	2B	Maintenance procedures reviewed were adequate. The procedure revision backlog was properly prioritized with reasonable reduction goals. The process to control issue of the most up-to-date procedure revision to the field from the document control system was adequate.
2/20/98	Positive	IR 98-81	N	MAINT	2A 5C	The overall plant material condition and housekeeping were adequate to support restart. Some minor deficiencies were observed that indicated continued aggressive attention was necessary to ensure management standards were met and to identify and capture material problems in the plant. Use of the equipment malfunction identification system deficiency tag system was inconsistent. The corrective maintenance backlog was large, but was properly managed. A reasonable plan had been developed to reduce the backlog.
2/20/98	Positive	IR 98-81	N	MAINT	5A 5B	The limiting condition for operation (LCO) maintenance plan formal critiques were thorough and self-critical, and addressed areas for improvement, successes, and failures. The LCO maintenance process was a good initiative, but was not yet mature. Continued management attention is appropriate until the process is fully developed.
2/20/98	Positive	IR 98-81	N	MAINT	5B	Inspectors assessed that implementation of the Preventive Maintenance (PM) program was adequate. The backlog of PMs was large, but was properly managed and was trending down. The backlog was properly categorized and safety-related PMs were performed as required. PM deferrals were adequately justified.
2/1/98	Positive	IR 97-21	N	MAINT	2A	The licensee made significant improvements to the station air compressors (SACs) to improve their reliability.
2/1/98	Positive	IR 97-21	N	MAINT	5A 5C	A sizable corrective maintenance backlog exists for both Salem units. A backlog reduction plan has been developed with goals that the licensee believes can be attained without impact on plant safety and maintenance resources. Additionally, the licensee has established an adequate program for monitoring the effectiveness of the backlog reduction plan.
2/1/98	Positive	IR 97-21	N	MAINT	4C 4B 5C	The licensee met all technical specification requirements for the 2B emergency diesel generator (EDG) failure. Appropriate trouble-shooting activities were performed using an approved system engineering action plan. The apparent cause of the 2B EDG failure was a defective oiler resulting in insufficient lubrication to the B train air start motors. The licensee is continuing its investigation of the failure mechanism.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
2/1/98	Positive	IR 97-21	N	MAINT	3A	Unit 1 refueling activities were controlled and conducted in a safe manner, and communication between personnel involved was good.
12/1/97	Negative	IR 97-81	N	MAINT	2B	Although licensed operators were familiar with risk considerations for shutdown conditions, they displayed some unfamiliarity regarding the risk matrix utilized during plant power operations. This applied to both the Salem and Hope Creek stations.
12/1/97	Positive	IR 97-81	N	MAINT	2B	PSE&G's self-assessment of the maintenance rule program was thorough and addressed many weaknesses of the station-wide MR program. Considerable progress had been accomplished regarding previous NRC maintenance rule inspection findings identified during the Hope Creek MR baseline inspection.
12/1/97	Positive	IR 97-81	N	MAINT	2B	A recent QA surveillance of a maintenance rule attribute was very detailed and thorough.
12/1/97	Positive	IR 97-81	N	MAINT	2B	System managers, licensed operators, and managers had a good overall knowledge of the maintenance rule.
12/1/97	Positive	IR 97-81	N	MAINT	2B	The team concluded that the (a)(1) and (a)(2) SSCs reviewed in detail by the team met the requirements of the rule. The team also determined that the goals for the (a)(1) SSCs and the corrective actions taken were acceptable.
12/1/97	Positive	IR 97-81	N	MAINT	2B	Industry operating events were effectively integrated into the maintenance rule program.
12/1/97	Positive	IR 97-81	N	MAINT	2B	The quality of the Salem probabilistic risk assessment was appropriate to risk rank systems for the maintenance rule.
12/1/97	Positive	IR 97-81	N	MAINT	2B	The scoping of structures, systems and components (SSCs) for inclusion into the maintenance rule was appropriate. Conservatism was noted in many instances.
11/30/97	NCV LER	IR 97-19 LER 97-006 NCV 97-19-02	L	MAINT	2B	This LER describes inadequate TS required surveillance test for the pressurizer overpressure protection system (POPS). On March 12, 1997, Salem determined that a test procedure for POPS initiation logic did not include testing of two relays. The reactor operator promptly declared the POPS inoperable and entered TS 4.0.3 which required the relays to be tested within 24 hours. The licensee revised the test procedure, satisfactorily tested the POPS channels within the required time, and exited TS 4.0.3. Salem is currently upgrading their surveillance procedures as part of TSSIP.

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Date	Type	Source	ID	SFA	Code	Item Description
11/30/97	NCV LER	IR 97-19 LER 97-008	L	MAINT	2B	This LER describes inadequate surveillance testing of pressurizer power-operated relief valve accumulator solenoid valves and check valves. Technical specification 4.0.5 and ASME Section XI Code require the PORV accumulator solenoid valves be full cycle exercised and stroke time tested. On March 21, 1997 the licensee identified that the solenoid valves were only being tested in the open position and not stroke time tested and that the check valves were only being tested in the closed position, thereby failing to verify adequate recharging of the PORV accumulators. Although this testing was not properly performed, the partial testing performed by the licensee verified that these components would operate in their required safe mode of operation to mitigate the consequences of an accident.. The licensee's proposed corrective actions are acceptable. Additionally, a technical specification surveillance improvement project (TSSIP) has been initiated to improve the quality of inservice testing.
11/30/97	LER	IR 97-19 LER 97-001	L	MAINT	2B	This LER describes inadequate surveillance testing of pressurizer over-pressure relief (PORV) system accumulator discharge check valves. Technical Specifications necessitate leak testing of these valves at the functional maximum differential pressure (dp) or by providing a correction factor to the lower dp test results up to the functional maximum dp. Upon identification by the licensee on January 15, 1997, that these valves had not been tested at a functional maximum dp, the licensee satisfactorily tested the accumulator check valves on January 16, 1997. The failure to perform testing at the required pressure was attributed to a previous procedure change that was made in response to industry concerns about a gradual loss of control air versus a catastrophic loss of control air.
11/30/97	Positive	IR 97-19	N	MAINT	5B 5A	The licensee met all Technical Specification requirements for the 2A emergency diesel generator (EDG) failure. Appropriate trouble-shooting activities were performed, although the failure mechanism was not determined. Licensee management acknowledged that they could have been more aggressive in saving failed components for evaluation and more thorough in investigating for the root cause and implemented actions to address these weaknesses.
11/30/97	Positive	IR 97-19	N	MAINT	2B 4C	The licensee's steam generator replacement project was done properly. Overall, the steam generator replacement, restoration of affected components and systems, and the related engineering evaluations to establish the extent of changes resulting from the replacements a part of the 10 CFR 50.59 process were effective. Follow up work including testing, and training of plant operators to the slight differences between the Unit 2 original Series-51 and Unit 1 replacement Model F steam generators was adequately turned over to the plant for completion as part of the operational readiness process.
10/19/97	Positive	IR 97-18	N	MAINT	5C 3A	The licensee took appropriate corrective actions for personnel errors related to Unit 1 maintenance activities. These errors included the performance of a modification on the wrong service water valve and completion of supervisor hold point sign offs on procedures for the condenser hot wells prior to completion of the procedure steps.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
10/19/97	Positive	IR 97-18	N	MAINT	2A 5C	Overall, the material condition of Unit 2 was good with the noted exceptions of the pressurizer code safety valves and the 22 steam generator steam flow transmitters. The licensee was actively pursuing resolution to these issues and planning for a forced and potentially a planned outage to implement the repairs.
10/19/97	Negative	IR 97-18	N	MAINT	2B 3C	The failure of the operations department to consult the system engineer when performing a major revision to the procedure for leak testing the boron injection tank isolation valves was a weakness in the interface between operations and engineering. The questioning by shift operators of their ability to successfully perform the test as written within the required Technical Specification time frame was good.
10/19/97	Positive	IR 97-18	N	MAINT	5B	The licensee's troubleshooting of the failure of the 22 steam generator channel II and III steam flow transmitters was appropriate and extensive. Although their efforts were inconclusive, their planning and implementation had improved compared to that of the pressurizer level transmitter troubleshooting. In addition, the licensee was appropriately pursuing a software change to the Advanced Digital Feedwater Control System to remove an operator burden.

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Date	Type	Source	ID	SFA	Code	Item Description
4/1/98	Positive	IR 98-04	N	ENG	4B 2A	The licensee's resolution of the NRC observations regarding the requirements traceability matrix was acceptable.
4/1/98	Positive	IR 98-04	N	ENG	4B 2A	The licensee appropriately addressed the NRC concerns regarding signing off of test procedure prerequisites.
4/1/98	Positive	IR 98-04	N	ENG	4B 2A	The actions to address the control room ventilation test procedure inadequacies were acceptable.
4/1/98	Positive	IR 98-04	N	ENG	4B 2A	The licensee's review and resolution of test discrepancies regarding component cooling water flow balance were acceptable and the engineering documents resulting from this review were also acceptable.
4/1/98	Positive	IR 98-04	N	ENG	4B 2A	PSE&G maintained acceptable controls over the conduct of the Unit 1 power ascension tests and the integrated test program remained acceptable. Tests were being conducted in an acceptable manner by a knowledgeable technical staff.
4/1/98	Negative	IR 98-04	N	ENG	4B 2A	Although the control loop tuning acceptance criteria were incorrect, no violation of NRC requirements occurred. However, a better understanding by engineering of the process dynamics, might have resulted in a better definition of the acceptance criteria and avoided test delays.
4/1/98	Positive	IR 98-04	N	ENG	4B 2A	The licensee properly addressed the inadequate surveillance test procedure pertaining to the turbine trip logic testing.
3/15/98	VIO	IR 98-01 VIO 98-01-10 LER 96-34	N	ENG	2A 2B	Elevated grass levels in the Delaware River combined with degraded service water strainers and lack of service water reliability program oversight resulted in accelerated rates of service water biofouling. Weak management attention allowed biofouling to occur at unpredictable rates. Several instances of biofouling occurred in plant components before strainer degradation was identified and effective corrective actions were taken. In one instance, the biofouling contributed to the inoperability of a Unit 2 safety related chiller. Salem staff failed to take prompt corrective actions to determine and correct the cause of service water biofouling problems. System Engineering and Operations interfaces were weak during the analysis of those problems. The licensee did not adequately evaluate the extent of condition at both Salem Units.

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Date	Type	Source	ID	SFA	Code	Item Description
3/15/98	Negative	IR 98-01	N	ENG	5C	The licensee continued to adequately pursue resolution of issues related to the control area ventilation system (CAVS). However, long term corrective actions are still necessary to eliminate the need for maintenance mode, a time-consuming, resource-intensive work around which ensures adequate differential pressure margin between the control room and the adjacent spaces. When this mode is employed, then any circumstance which necessitates accident pressurized mode, such as an inoperable CAVS radiation monitor, would require a unit shutdown to Mode 5 so that the control room emergency air conditioning system intake could be lined up to a non-operating unit.
3/15/98	Positive	IR 98-01	N	ENG	4A 4C	The licensee had adequately demonstrated design basis capability for Salem Unit 1 MOVs to support restart. Justifications for key program assumptions and the applied valve factors were adequate.
2/20/98	Positive	IR 98-81	N	ENG	3C 5B 2A	The root cause investigation and repair activities associated with the failure of the 2A emergency diesel generator turbocharger received excellent management oversight. Appropriate technical support was provided for the investigation using internal and external personnel. Affected components were controlled to ensure evidence was preserved. Although the licensee's root cause investigation was not finished at the conclusion of this inspection, the observed portions of the licensee's investigation were well performed.
2/20/98	Positive	IR 98-81	N	ENG	5A 4C	The licensee's self-assessments provide insightful views on engineering programs and their implementation. In light of the current engineering workload and backlog of corrective action items, licensee management attention is necessary to ensure corrective actions for self-assessment findings are implemented and are effective.
2/20/98	Positive	IR 98-81	N	ENG	5C	The licensee is committed to reduction of the corrective action and modification backlogs. Appropriate reviews have been performed to ensure the backlog is understood and will not impact the safe restart of Unit 1 or the continued operation of Unit 2. A sample review of the corrective action item backlog by the inspector found no outstanding items requiring action before restart.
2/20/98	Positive	IR 98-81	N	ENG	3C 4B 3B	System managers were actively supporting resolution of priority station issues and were working to reduce the corrective maintenance backlog for their systems. During interviews and discussions regarding specific issues, system managers demonstrated a good general knowledge of their systems and responsibilities. The oversight and development of less experienced Salem System Engineering staff continues to be a challenge for licensee management.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
2/20/98	Negative	IR 98-81	N	ENG	3A 2A 4C	A review of recent deficiencies entered in the licensee's corrective action program found the majority of issues were adequately addressed. Two exceptions were identified. In one case, an engineering evaluation for unacceptable Emergency Control Air Compressor test results was not performed as required due to personnel error, and a cognizant system manager did not follow-up on the problem. In the second case, a safety-related cooler was significantly degraded by grass in the service water system, and the impact on other service water cooled equipment was not formally evaluated as required. Information relied upon by the licensee in an undocumented evaluation of generic implications was not verified or confirmed.
2/20/98	Positive	IR 98-81	N	ENG	2A 2B 4B	System performance monitoring programs provided an appropriate framework for predicting equipment problems prior to their development. Procedural guidance reflects the integration of input from other performance monitoring programs such as inservice test and motor/pump trending programs. However, the monitoring role of system managers was not yet fully implemented due to emergent issues associated with current plant status. A planned transition to full implementation of the performance monitoring program, following the Unit 1 restart effort, is intended to ensure acceptable safety system reliability and availability.
2/20/98	Positive	IR 98-81	N	ENG	4C	A review of operability determinations concerning significant design and licensing issues found that the licensee provided appropriate technical and regulatory justifications. No safety concerns were identified with regard to the current plant condition and the licensee was communicating with the Office of Nuclear Reactor Regulation to resolve and/or clarify certain Salem licensing basis requirements.
2/20/98	Positive	IR 98-81	N	ENG	3C 4B	System Engineering management oversight and involvement ensured station priorities were being addressed. Daily conference calls between the engineering departments and an action item tracking system were effective tools for communicating engineering priorities. Direct management involvement was observed in significant issues with the potential to affect plant safety.
2/1/98	VIO	IR 97-21 VIO 97-21-09	N	ENG	4A	Four power range neutron detectors located in a harsh environment were not included in the list of equipment important to safety requiring environmental qualification. In addition, a record of qualification did not exist to verify that the detectors were qualified for their intended application and met their performance requirements when subject to conditions when they must perform their safety function.
2/1/98	Negative	IR 97-21	N	ENG	5C	Although the licensee's performance improvement requests written to address potentially unanalyzed breaker lineups and inadequate breaker coordination properly addressed the NRC questions with these issues, the licensee's actions, when these issues were originally identified, were not timely.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
2/1/98	Positive	IR 97-21	N	ENG	5A 5C	The licensee Quality Assurance department performed a broadly based and probing assessment of the Salem inservice test (IST) program. The corrective actions for the audit findings were prompt and effective. Tracking and trending of component performance was an IST program strength.
2/1/98	Positive	IR 97-21	N	ENG	5B 5C 4C	The licensee has taken appropriate actions to address weaknesses previously identified in the Vendor Manual Program. Specifically, the licensee has implemented a more rigorous vendor recontact program, they have significantly reduced the backlog of vendor documents onsite requiring processing, and they have developed a performance indicator to track and manage the backlog and are evaluating the need for additional performance indicators.
2/1/98	Positive	IR 97-21	N	ENG	4B 5B	Although the quantity of backlogged engineering activities is large, the licensee was properly managing and prioritizing the activities.
2/1/98	Positive	IR 97-21	N	ENG	4C 4A	The licensee adequately completed the modification installation and testing of the Unit 1 containment fan coil units to address potential water hammer and two phase flow conditions. In addition, adequate measures to ensure freeze protection have been taken.
2/1/98	Positive	IR 97-21	N	ENG	1B 4A 5C	The licensee took effective corrective actions to resolve deficiencies with emergency operating procedures and plant design documents regarding the switchover of emergency core cooling system pumps to cold and hot leg recirculation as well as Unit 1 safety injection pump deficiencies and providing pump run out protection for the charging and safety injection pumps.
2/1/98	Positive	IR 97-21	N	ENG	4A	The licensee took appropriate steps to improve the performance of the Unit 1 radiation monitor system. Where design was deficient, they implemented modifications to rectify the deficiencies.
2/1/98	VIO	IR 97-21 VIO 97-21-04	N	ENG	5B 4A	Licensee modifications and stroke time testing of gate valves susceptible to pressure locking and thermal binding were acceptable. However, some of the licensee's reviews of the Valve Operation Test and Evaluation System (VOTES) test results were not acceptable. A violation of 10CFR Appendix B, Criterion XI, "Test Control" resulted for the incorrect use of thrust switch repeatability and torque correction factor.
2/1/98	Positive	IR 97-21	N	ENG	5C	The licensee has taken appropriate actions to provide reasonable assurance that the current design, operation, and testing of the PORVs and their associated accumulators is adequate to ensure the ability of Salem Unit 1 to cope with an inadvertent safety injection initiation event.
2/1/98	Positive	IR 97-21	N	ENG	4A 5C	The licensee took appropriate actions to resolve power operated relief valve (PORV) seat leakage problems. Since the new PORV trim sets have been tested greatly in excess of their cyclic design requirements with no significant leakage, there is reasonable assurance that the previous leakage problems have been corrected.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
2/1/98	Positive	IR 97-21	N	ENG	4B	The licensee acceptably addressed Integrated Performance Assessment Team identified separation issues and acceptably corrected the deviations to conform to the revised criteria.
2/1/98	Positive	IR 97-21	N	ENG	4A	Previously identified pipe support concerns have been properly corrected by a combination of reanalyses and modifications.
2/1/98	Positive	IR 97-21	N	ENG	2A 2B	The licensee has implemented appropriate corrective actions to address the longstanding reliability issues associated with the Unit 1 positive displacement charging pump.
2/1/98	VIO	IR 97-21	N	ENG	2B 2A	The licensee has taken acceptable actions to address testing of Unit 1 molded case circuit breakers. However, the licensee had failed to perform surveillance testing of a Unit 2 electrical containment penetration molded-case circuit breaker as required by the Technical Specifications.
11/14/97	URI	IR 97-20 URI 97-20-01	N	ENG	4B 4A	The acceptability of the current method to calculate the temperature that is representative of the entire containment volume was unresolved pending the licensee's evaluation of the upper containment temperature records from the power ascension and the use of the results in accident analyses and plant procedures.
11/14/97	Negative	IR 97-20	N	ENG	4B 4A	Two calculations used to justify a lower calculated average temperature were either unclear or did not sufficiently justify the basis for their conclusions.
11/14/97	Negative	IR 97-20	N	ENG	4A 4B	The licensee was proactive in seeking the assistance of a consultant to determine the best averaging method, but their decision to return to the ten-sensor arithmetical average was not adequately supported.
10/19/97	NCV LER	IR 97-18 LER 97-11-08 IR 97-09 IR 97-11 NCV 97-18-02	N	ENG	4A	This LER involved an apparent violation for failure to update the UFSAR regarding the Unit 2 emergency core cooling system (ECCS) switchover scheme.
11/30/97	Positive	IR 97-19	N	ENG	5A 5C	The root cause analysis to address repetitive Safety Injection relief valve failures was thorough. Corrective actions taken to resolve the problems were adequate.
11/30/97	Positive	IR 97-19	N	ENG	4A 4C	The licensee took effective corrective actions through hardware design changes and recurring maintenance activities to limit moisture in the Unit 1 EDG air start systems. Replacement of the 1B and 1C EDG rack booster air regulators before entering Mode 6 was a good initiative.
11/30/97	Positive	IR 97-19	N	ENG	4A 1A	The Unit 1 fuse control program procedures were in place and properly implemented. The validation of installed Unit 1 fuses was complete and acceptable.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
11/30/97	Positive	IR 97-19	N	ENG	4A 5B	The design change package which installed feedwater flow elements and Leading Edge Flow Meters (LEFM) in the Unit 1 feedwater system, properly addressed the bypass feedwater flow concerns. The root cause evaluation and modification of the LEFM software to address apparent instrument drift errors were acceptable.
10/19/97	Negative	IR 97-18	N	ENG	3B 5A	The licensee adequately addressed two condition reports related to undersized welds on a junction box support for the '1C' emergency diesel generator and the lack of qualification assessment of several contract engineering personnel. The licensee's failure to properly initiate the qualification process for these individuals prior to using them as System Managers was a weakness.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
2/1/98	Positive	IR 97-21	N	PS	1C 4C	The fire watches, used as a compensatory measure while the fire resistive capabilities remain undetermined for electrical raceway fire barrier systems, were knowledgeable of their duties and provided effective monitoring of assigned plant locations.
2/1/98	Positive	IR 97-21	N	PS	5C 1C	In the past year, the licensee has made a concerted effort to improve their emergency drill response performance through the increased efforts of the Emergency Preparedness staff, additional training, and management support of the program. The improvement was evident during conduct of an off-hours unannounced drill.
2/1/98	Strength	IR 97-21	N	PS	1C 2B	The RP program oversight consisted of a combination of a good Quality Assurance audit and surveillance programs, an effective radiological problem corrective action program, and self-assessment activities that provide meaningful performance review.
2/1/98	Positive	IR 97-21	N	PS	5A 5C 1C	The licensee has self-identified significant weaknesses in the radiation protection (RP) technician continuing training program and taken appropriate short term corrective actions and identified long term plans to correct the identified deficiencies.
2/1/98	Positive	IR 97-21	N	PS	1C	All required radiological postings and locked areas were within regulatory requirements and the areas were clear of unnecessary equipment and free of safety hazards. Several minor posting weaknesses were observed indicating the need for continued diligence in this area.
2/1/98	Positive	IR 97-21	N	PS	1C	Excellent contamination control practices at Salem and Hope Creek stations have resulted in no reported internal exposures. The internal exposure program capability has begun to improve. Further hardware and software upgrades are planned for early 1998.
2/1/98	Negative	IR 97-21	N	PS	1C	Dosimetry discrepancies were, in some cases, non-conservatively dispositioned for personnel exposure record purposes. In all these cases, only minor exposures were involved. The lack of exposure discrepancy investigation guidance is being addressed by the licensee to strengthen this program area.
10/19/97	NCV LER	IR 97-18 LER 97-005 NCV 97-18-03	L	PS	1C	This LER involved a composite liquid sample that was not analyzed within the required time limits. Chemistry management determined that personnel had mis-interpreted the time requirements for analyzing the samples and conducted training and revised the internal process to ensure prompt delivery of the samples to the vendor for analysis. The inspector concluded that this issue was of minor significance and that the corrective actions appeared adequate.
11/30/97	Positive	IR 97-19	N	PS	1C 3C	The licensee maintained an effective site security program. Management support of program objectives was evident. Performance of security department personnel and equipment were generally good. 4-PSE&G's provisions for land vehicle control measures satisfied regulatory requirements and licensee commitments. The site protected area barrier was properly installed and maintained, and satisfied the requirements of the NRC-approved security plan.

SALEM 1 & 2 PLANT ISSUES MATRIX

Date	Type	Source	ID	SFA	Code	Item Description
10/19/97	VIO	IR 97-18 VIO 97-18-04	N	PS	1C 3C	The inadvertent isolation of fire protection water to the Unit 1 and 2 auxiliary buildings and containments degraded the post-fire safe shutdown capability of Salem Unit 2, which was operating at 55% reactor power at the time of the event. The licensee met all reporting requirements for this occurrence, took adequate immediate corrective actions, but their additional corrective actions identified in their Special Report were not of sufficient scope to address the issues which contributed to this event. In addition, this isolation of fire water along with the inappropriate removal of a control room radiation monitor demonstrated weaknesses in the review and oversight by control room operations personnel of work activities performed by contracted craft personnel in the control room related to Unit 1 which affected Unit 2 operations.

ABBREVIATIONS USED IN PIM TABLE

CAVS	control area ventilation system
DFOTP	diesel fuel oil transfer pump
ECCS	emergency core cooling system
EDG	emergency diesel generator
IST	inservice test program
LCO	limiting condition for operation
LEFM	leading edge flow meter
MR	maintenance rule
PM	preventive maintenance
POPS	pressurizer overpressure protection system
PORV	power-operated relief valve
PSE&G	Public Service Electric & Gas Company
RP	radiation protection
SSC	structure, system, or component
TS	technical specification
TSSIP	technical specification surveillance improvement project
UFSAR	updated final safety analysis report
VOTES	valve operation test and evaluation system

GENERAL DESCRIPTION OF PIM TABLE COLUMNS

Date	The actual date of an event or significant issue for those items that have a clear date of occurrence (mainly **LERs**), the date the source of the information was issued (such as for **EALs**), or the last date of the inspection period (for **IRs**).
Type	The categorization of the item or finding - see the Type / Findings Type Code table, below.
Source	The document that describes the findings: **LER** for Licensee Event Reports, **EAL** for Enforcement Action Letters, or **IR** for NRC Inspection Reports.
ID	Identification of who discovered issue: **N** for NRC; **L** for Licensee; or **S** for Self Identifying (events).
SFA	SALP Functional Area Codes: **OPS** for Operations; **MAINT** for Maintenance; **ENG** for Engineering; and **PS** for Plant Support.
Code	Template Code - see table below.
Item Description	Details of NRC findings on LERs that have safety significance (as stated in IRs), findings described in IR Executive Summaries, and amplifying information contained in EALs.

TYPE / FINDINGS CODES

ED	Enforcement Discretion - No Civil Penalty
Strength	Overall Strong Licensee Performance
Weakness	Overall Weak Licensee Performance
EEI *	Escalated Enforcement Item - Waiting Final NRC Action
VIO	Violation Level I, II, III, or IV.
NCV	Non-Cited Violation
DEV	Deviation from Licensee Commitment to NRC
Positive	Individual Good Inspection Finding
Negative	Individual Poor Inspection Finding
LER	Licensee Event Report to the NRC
URI **	Unresolved Item from Inspection Report
Licensing	Licensing Issue from NRR
MISC	Miscellaneous - Emergency Preparedness Finding (EP), Declared Emergency, Nonconformance Issue, etc. The type of all MISC findings are to be put in the Item Description column.

TEMPLATE CODES

1	Operational Performance: **A** - Normal Operations; **B** - Operations During Transients; and **C** - Programs and Processes
2	Material Condition: **A** - Equipment Condition or **B** - Programs and Processes
3	Human Performance: **A** - Work Performance; **B** - Knowledge, Skills, and Abilities / Training; **C** - Work Environment
4	Engineering/Design: **A** - Design; **B** - Engineering Support; **C** - Programs and Processes
5	Problem Identification and Resolution: **A** - Identification; **B** - Analysis; and **C** - Resolution

NOTES:

* EEIs are apparent violations of NRC requirements that are being considered for escalated enforcement action in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Action" (Enforcement Policy), NUREG-1600. However, the NRC has not reached its final enforcement decision on the issues identified by the EEIs and the PIM entries may be modified when the final decisions are made. Before the NRC makes its enforcement decision, the licensee will be provided with an opportunity to either (1) respond to the apparent violation or (2) request a predecisional enforcement conference.

** URIs are unresolved items about which more information is required to determine whether the issue in question is an acceptable item, a deviation, a nonconformance, or a violation. However, the NRC has not reached its final conclusions on the issues, and the PIM entries may be modified when the final conclusions are made.

ENCLOSURE 2

III. Recommended Inspection Effort:

SALEM INSPECTION PLAN[1]

INSPECTION PROCEDURE	TITLE/ PROGRAM AREA	PLANNED DATES	INSPECTION TYPE	PRIORITY[2]
84750	Environmental Monitoring	6/1/98	Core	
92903	Engineering Followup (Backlog Reduction - VIO, URI, IFI, LER)	6/15/98	Initiative	1
73753	Inservice Inspection Program	6/22/98	Core	
86750	Solid Radwaste & Transportation	7/13/98	Core	
81700	Physical Security	8/3/98	Core	
84750	Radioactive Effluents (ODCM implementation, including projected dose calculation methodology)	8/17/98	Initiative	1
40500 37550 37001	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems Engineering Inspection 10CFR50.59 Safety Evaluation Program	10/5/98 10/5/98 10/5/98	Core[3] Core Core	
83750	Occupational Radiation Exposure	10/5/98	Core	
62700	Maintenance Planning and Implementation	10/26/98	Initiative	1
92903	Engineering Followup (Backlog Reduction - VIO, URI, IFI, LER)	12/7/98	Initiative	1

1 Does not include resident inspections

2 Priority assigned consistent with Region I guidelines for inspection followup

3 These three listed inspections are substituted for the core requirements of 37550.